

IN THE CLAIMS

Please **amend** claims 1, 18, 19, and 34; **cancel** claims 4-6, 22-24 without prejudice; and **add** new claims 40-46 as shown in the Summary of the Claims, *infra*.

Amendments to the claims are made without the intention of surrendering the availability of equivalents to which the subject matter would be afforded.

SUMMARY OF THE CLAIMS

Claim 1 (currently amended). A printing system including a host device which creates print data in a page unit that comprises a plurality of pages or a single page and a printing device which prints out the print data transmitted from the host device,

said printing device further including memory means for storing pages of the print data at least partially,

wherein, when the print data exceed a memory capacity of the memory means, the print data are printed out and comprise first print data, which correspond to print data within the memory capacity of the memory means, and second print data, which correspond to print data exceeding the memory capacity of the memory means and which are transmitted from the host device; and

re-transmission requesting means which requests the host device to re-transmit the second print data to the printing device when the print data are to be printed out in multiple copies,

wherein printing of the print data of second and subsequent copies is carried out and comprises the first print data and the second print data, which are re-transmitted from the host device in response to the request of the re-transmission requesting means; and

wherein the memory means stores a trailing side of the print data as the first print data and stores transmitted data from the host device from a leading side, and when stored data reaches the memory capacity, the memory means overwrites the stored data from the leading side so as to store the transmitted data.

Claim 2 (canceled).

Claim 3 (previously presented). The printing system as set forth in claim 1, wherein said memory means stores identification information for identifying the second print data, and

the re-transmission requesting means decides, based on the identification information, the second print data for which re-transmission should be requested to the host device.

Claims 4-6 (canceled).

Claim 7 (original). The printing system as set forth in claim 6, wherein the memory means stores, as identification information, page numbers of the stored data whose content has been erased by overwrite by the transmitted data, and
the re-transmission requesting means decides, based on the identification information, the second print data for which re-transmission should be requested to the host device.

Claim 8 (previously presented). The printing system as set forth in claim 1, wherein, when the print data exceed the memory capacity of the memory means, the memory means provides two storage areas based on the memory capacity in the memory means, in which the print data stored in one of the storage areas from a leading side are maintained, and the print data stored in the other storage area are overwritten so as to store the print data from a trailing side, and

the printing device further includes first combining means for extracting the print data in order of ascending page number from the one of the storage areas and for extracting the print data in order of descending page number from the other storage area, said first combining means combining the extracted print data from the two storage areas with each other, and the printing device printing out the print data which were combined by the first combining means on a single recording medium.

Claim 9 (original). The printing system as set forth in claim 8, wherein memory capacities of the two storage areas are substantially equal.

Claim 10 (original). The printing system as set forth in claim 8, wherein the printing device further includes re-transmission requesting means for

requesting the host device to re-transmit, as the second print data, the print data of pages which were erased by overwrite in the other storage area, and
the memory means stores the re-transmitted print data by overwrite on a storage area of the print data which have been printed already.

Claim 11 (original). The printing system as set forth in claim 1, wherein, when the print data exceed the memory capacity of the memory means, the memory means provides two storage areas based on number of pages of the print data in the memory means, in which the print data stored in one of the storage areas from a leading side are maintained, and the print data stored in the other storage area are overwritten by the print data from a tailing side, and
the printing device further includes second combining means for extracting the print data in order of ascending page number from the one of the storage areas and for extracting the print data in order of descending page number from the other storage area, said second combining means combining the extracted print data from the two storage areas with each other, and the printing device printing out the print data which were combined by the second combining means on a single recording medium.

Claim 12 (original). The printing system as set forth in claim 11, wherein the print data respectively stored in the two storage areas have substantially equal page numbers.

Claim 13 (original). The printing system as set forth in claim 11, wherein the printing device further includes re-transmission requesting means for requesting the host device to re-transmit, as the second print data, the print data of pages which were erased by overwrite in the other storage area, and
the memory means stores the re-transmitted print data by overwrite on a storage area of the print data which have been printed already.

Claim 14 (previously presented). A printing system including a host device which creates print data in a page unit that comprises a plurality of pages or a

single page and a printing device which prints out the print data transmitted from the host device,

said printing device further including memory means for storing pages of the print data at least partially;

transmission requesting means for requesting the host device to transmit second print data in order of descending page number from a tailing side; and

third combining means for extracting first print data from the memory means in order of ascending page number and for combining the extracted first print data with the second print data which were transmitted from the host device in response to the request of the transmission requesting means, and

the printing device prints out print data which were combined by the third combining means on a single recording medium,

wherein, when the print data exceed a memory capacity of the memory means, the print data are printed out and comprise the first print data, which correspond to print data within the memory capacity of the memory means, and the second print data, which correspond to print data exceeding the memory capacity of the memory means and which are transmitted from the host device.

Claim 15 (original). The printing system as set forth in claim 14, wherein the printing device further includes re-transmission requesting means for requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies, and

the third combining means extracts the first print data in order of ascending page number from the memory means, and combines the extracted first print data with the second print data which were re-transmitted from a tailing side in response to the request of the re-transmission requesting means.

Claim 16 (original). The printing system as set forth in claim 1, wherein the memory means stores the first print data both in order of ascending page number from a leading side and in order of descending page number from a tailing side, and

the printing device further includes fourth combining means for extracting the first print data from the memory means in order of ascending

page number and for extracting the first print data in order of descending page number, said fourth combining means combining the extracted first print data with each other, and the printing device printing out the print data which were combined by the fourth combining means on a single recording medium.

Claim 17 (original). The printing system as set forth in claim 16, wherein, after printing the print data, the fourth combining means extracts from the memory means the first print data which should be printed next, and combines with each other the first print data extracted, and

the memory means stores by overwrite the data combined by the fourth combining means on a storage area storing the data which have been printed already, and

the printing device prints out the data stored by overwrite on the memory means on the recording medium.

Claim 18 (currently amended). A printing system including:

memory means for storing in a page unit that comprises a plurality of pages or a single page of print data transmitted from a host device;

output section for printing the print data stored in the memory means;
and

control means for controlling the memory means and the output section, wherein the control means, upon detecting presence of print data of pages which exceed a memory capacity of the memory means, instructs the memory means to store identification information which is to be used to identify the print data of exceeding pages, and requests, based on the identification information, the host device to re-transmit the print data of exceeding pages corresponding to the identification information, and the control means combines in a page unit that comprises a plurality of pages or a single page the print data stored in the memory means and the print data of exceeding pages which were re-transmitted from the host device so as to print out the data from the output section; and

wherein the memory means stores a trailing side of the print data as the first print data and stores transmitted data from the host device from a leading

side, and when stored data reaches the memory capacity, the memory means overwrites the stored data from the leading side so as to store the transmitted data.

Claim 19 (currently amended). A printing method in a printing system, comprising the steps of:

- (1) storing pages of print data at least partially on memory means, which print data having been transmitted in a page unit that comprises a plurality of pages or a single page from a host device; wherein said step (1) includes the sub-steps of:

storing a trailing side of the print data as the first print data in the memory means and printing method in a printing system and

storing the transmitted data from the host device from a leading side, and,

when the stored data reach the memory capacity, overwriting the stored data from a leading side so as to store the transmitted data; and

- (2) printing the print data, when the print data exceed a memory capacity of the memory means, that comprise first print data, which correspond to print data within the a memory capacity of the memory means, and second print data, which are transmitted from the host device and which correspond to print data exceeding the memory capacity of the memory means, wherein said step (2) further includes the sub-steps of:

2(a) requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies; and

2(b) printing the print data of second and subsequent copies, which data comprise the first print data and the second print data which are re-transmitted from the host device.

Claim 20 (canceled).

Claim 21 (previously presented). The printing method in a printing system as set forth in claim 19, wherein said step 2(a) further includes the steps of:

storing identification information for identifying the second print data in the memory means; and

deciding, based on the identification information, the second print data for which re-transmission should be requested to the host device.

Claims 22-24 (canceled).

Claim 25 (original). The printing method in a printing system as set forth in claim 24, wherein said step (1) includes the step of storing, as identification information, page numbers of the stored data whose content has been erased by overwrite by the transmitted data, and said step (2) includes the step of deciding, based on the identification information, the second print data for which re-transmission should be requested to the host device.

Claim 26 (previously presented). The printing method in a printing system as set forth in claim 19, wherein said step (1) includes the step of dividing, when the print data are to exceed the memory capacity of the memory means, a storage area of the memory means into two storage areas based on the memory capacity, in which the print data stored in one of the storage areas from a leading side are maintained, and the print data stored in the other storage area are overwritten so as to store the print data from a tailing side, and said step (2) includes the steps of:

extracting the print data in order of ascending page number from the one of the storage areas and extracting the print data in order of descending page number from the other storage area , and

printing out the extracted print data from the two storage areas on a single recording medium.

Claim 27 (original). The printing method in a printing system as set forth in claim 26, wherein said step (2) further includes the steps of:

requesting the host device to re-transmit, as the second print data, the print data of pages which were erased by overwrite in the other storage area, and

storing the re-transmitted print data by overwrite on a storage area of the print data which have been printed already.

Claim 28 (previously presented). The printing method in a printing system as set forth in claim 19, wherein said step (1) includes the step of dividing, when the print data are to exceed the memory capacity of the memory means, a storage area of the memory means into two storage areas, in which the print data stored in one of the storage areas from a leading page are maintained, and the print data stored in the other storage area are overwritten by the print data from a tailing page, and said step (2) further includes the steps of:

extracting the print data in order of ascending page number from the one of the storage areas and for extracting the print data in order of descending page number from the other storage area, and

printing out the extracted print data from the two storage areas on a single recording medium.

Claim 29 (original). The printing method in a printing system as set forth in claim 28, wherein said step (2) further includes the steps of:

requesting the host device to re-transmit, as the second print data, the print data of pages which were erased by overwrite in the other storage area, and

storing the re-transmitted print data by overwrite on a storage area storing the print data which have been printed already.

Claim 30 (previously presented). The printing method in a printing system as set forth in claim 19, wherein said step (2) further includes the steps of:

requesting the host device to transmit the second print data in order of descending page number from a tailing side;

extracting the first print data from the memory means in order of ascending page number, and

printing out the extracted first print data and the second print data that were transmitted from the host device in response to the request of the transmission requesting means on a single recording medium.

Claim 31 (previously presented). The printing method in a printing system as set forth in claim 30, wherein said step (2) further includes the steps of:

- requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies; and

- extracting the first print data in order of ascending page number from the memory means; and

- printing out the extracted first print data and the second print data which were re-transmitted from a tailing side in response to the request of the re-transmission requesting means in multiple copies.

Claim 32 (previously presented). The printing method in a printing system as set forth in claim 19, wherein said step (1) includes the step of storing the first print data both in order of ascending page number from a leading side and in order of descending page number from a tailing side, and said step (2) further includes the steps of:

- extracting the first print data from the memory means in order of ascending page number and extracting the first print data in order of descending page number; and

- printing out the extracted first print data on a single recording medium.

Claim 33 (previously presented). The printing method in a printing system as set forth in claim 32, wherein said step (2) further includes the steps of:

- extracting, after printing the print data, the first print data which should be printed next from the memory means; and

- storing by overwrite the extracted data on a storage area storing the data which have been printed already; and

- printing out the data which were stored by overwrite in the memory means on the recording medium.

Claim 34 (currently amended). A printing method in a printing system, comprising the steps of:

- (a) storing in a page unit that comprises a plurality of pages or a single page of print data transmitted from a host device wherein said step (a) includes the sub-steps of:
 - storing a tailing side of the print data as the first print data in the memory means and printing method in a printing system and
 - storing the transmitted data from the host device from a leading side, and,
 - when the stored data reach the memory capacity, overwriting the stored data from a leading side so as to store the transmitted data;
- (b) detecting presence of print data of pages exceeding a memory capacity of the memory means in said step (a);
- (c) storing identification information for identifying the print data of exceeding pages;
- (d) requesting, based on the identification information, the host device to re-transmit the print data of exceeding pages; and
- (e) printing the print data in a page unit that includes the print data stored in said step (a) and the print data of exceeding pages which were re-transmitted from the host device in accordance with said step (d).

Claim 35 (previously presented). A printing method in a printing system, comprising a first overall printing step and a second overall printing step, said first overall printing step including the steps of:

- (a) receiving print data from a host device in a page unit that comprises a plurality of pages or a single page;
- (b) detecting receipt of print data in a page unit that comprises a plurality of pages or a single page which exceed a memory capacity of memory means so as to store page information of the exceeding pages in the memory means;
- (c) storing the received print data subsequently in the memory means in a page unit that comprises a plurality of pages or a single page, and storing the print data of exceeding pages in the memory means by overwriting in descending order from a site where print data of a tailing

page is stored toward a site where print data of a leading page is stored;
and

(d) printing the print data stored in a page unit that comprises a plurality of pages or a single page, and
said second overall printing step including the steps of:

(e) requesting, based on the page information of exceeding pages, the host device to re-transmit the print data of overwritten pages preceding the exceeding pages, and receiving the print data of the overwritten pages preceding the exceeding pages in a page unit that comprises a plurality of pages or a single page;

(f) printing the overwritten pages preceding the exceeding pages based on the print data which were received in a page unit that comprises a plurality of pages or a single page from the host device in said step (e), and printing the exceeding pages based on the print data which were stored in a page unit that comprises a plurality of pages or a single page in said step (c).

Claim 36 (previously presented). A printing method in a printing system, comprising the steps of:

(a) storing print data, which were transmitted from a host device from a leading side of the print data to a trailing side of the print data, in memory means in a page unit that comprises a plurality of pages or a single page, in which when presence of print data of pages which exceed a memory capacity of the memory means is detected, information of the exceeding pages is stored in the memory means, and the print data of pages preceding the exceeding pages are subsequently stored from the leading side in an area of the memory means which makes up half of a storage area of the memory means, and the print data of an area corresponding to the other half of the memory means are overwritten so as to store the transmitted print data from the trailing side in a page unit that comprises a plurality of pages or a single page;

(b) extracting appropriate pages of the print data information stored in a page unit that comprises a plurality of pages or a single page in said step (a),

(c) with regard to the exceeding pages which are not stored in the memory means, requesting the host device to re-transmit the print data based on the information of exceeding pages ; and

(d) printing the extracted print data and the print data based on the information of exceeding pages on a single recording medium.

Claim 37 (original). The printing method in a printing system as set forth in claim 36, further comprising the step of overwriting the print data of the storage area which have been printed already in said step (c) so as to store the print data re-transmitted from the host device.

Claim 38 (original). The printing method in a printing system as set forth in claim 36, wherein a boundary of the storage area of the memory means is variable in accordance with information volume of the print data transmitted from the host device.

Claim 39 (previously presented). A printing method in a printing system, comprising the steps of:

(a) storing print data transmitted from the host device in a page unit that comprises a plurality of pages or a single page, the print data being stored subsequently from a leading page until presence of print data of pages exceeding a memory capacity of the memory means is detected;

(b) extracting multiple sets of appropriate pages of print information which is stored in the memory means in a page unit that comprises a plurality of pages or a single page,

(c) with regard to the exceeding pages which are not stored in the memory means, requesting the host device to re-transmit the print data in descending order subsequently from the print data which correspond to a tailing page; and

(d) printing the extracted multiple sets of print data and the print data in descending order subsequently from the print data which correspond to a tailing page on a single recording medium .

Claim 40 (new) A printing system including a host device which creates print data in a page unit that comprises a plurality of pages or a single page and a printing device which prints out the print data transmitted from the host device,

said printing device further including memory means for storing pages of the print data at least partially,

wherein, when the print data exceed a memory capacity of the memory means, the print data are printed out and comprise first print data, which correspond to print data within the memory capacity of the memory means, and second print data, which correspond to print data exceeding the memory capacity of the memory means and which are transmitted from the host device; and

re-transmission requesting means which requests the host device to re-transmit the second print data to the printing device when the print data are to be printed out in multiple copies,

wherein printing of the print data of second and subsequent copies is carried out and comprises the first print data and the second print data, which are re-transmitted from the host device in response to the request of the re-transmission requesting means; and

wherein, when the print data exceed the memory capacity of the memory means, the memory means provides two storage areas based on the memory capacity in the memory means, in which the print data stored in one of the storage areas from a leading side are maintained, and the print data stored in the other storage area are overwritten so as to store the print data from a trailing side, and

the printing device further includes first combining means for extracting the print data in order of ascending page number from the one of the storage areas and for extracting the print data in order of descending page number from the other storage area, said first combining means combining the extracted print data from the two storage areas with each other, and the printing device printing out the print data which were combined by the first combining means on a single recording medium.

Claim 41 (new). A printing system including a host device which creates print data in a page unit that comprises a plurality of pages or a single page and a printing device which prints out the print data transmitted from the host device,

said printing device further including memory means for storing pages of the print data at least partially,

wherein, when the print data exceed a memory capacity of the memory means, the print data are printed out and comprise first print data, which correspond to print data within the memory capacity of the memory means, and second print data, which correspond to print data exceeding the memory capacity of the memory means and which are transmitted from the host device; and

re-transmission requesting means which requests the host device to re-transmit the second print data to the printing device when the print data are to be printed out in multiple copies,

wherein printing of the print data of second and subsequent copies is carried out and comprises the first print data and the second print data, which are re-transmitted from the host device in response to the request of the re-transmission requesting means; and

wherein, when the print data exceed the memory capacity of the memory means, the memory means provides two storage areas based on number of pages of the print data in the memory means, in which the print data stored in one of the storage areas from a leading side are maintained, and the print data stored in the other storage area are overwritten by the print data from a tailing side, and

the printing device further includes second combining means for extracting the print data in order of ascending page number from the one of the storage areas and for extracting the print data in order of descending page number from the other storage area, said second combining means combining the extracted print data from the two storage areas with each other, and the printing device printing out the print data which were combined by the second combining means on a single recording medium.

Claim 42 (new). A printing system including a host device which creates print data in a page unit that comprises a plurality of pages or a single page and a printing device which prints out the print data transmitted from the host device,

said printing device further including memory means for storing pages of the print data at least partially,

wherein, when the print data exceed a memory capacity of the memory means, the print data are printed out and comprise first print data, which correspond to print data within the memory capacity of the memory means, and second print data, which correspond to print data exceeding the memory capacity of the memory means and which are transmitted from the host device; and

re-transmission requesting means which requests the host device to re-transmit the second print data to the printing device when the print data are to be printed out in multiple copies,

wherein printing of the print data of second and subsequent copies is carried out and comprises the first print data and the second print data, which are re-transmitted from the host device in response to the request of the re-transmission requesting means; and

wherein the memory means stores the first print data both in order of ascending page number from a leading side and in order of descending page number from a tailing side, and

the printing device further includes fourth combining means for extracting the first print data from the memory means in order of ascending page number and for extracting the first print data in order of descending page number, said fourth combining means combining the extracted first print data with each other, and the printing device printing out the print data which were combined by the fourth combining means on a single recording medium.

Claim 43 (new). A printing method in a printing system, comprising the steps of:

(1) storing pages of print data at least partially on memory means, which print data having been transmitted in a page unit that comprises a

plurality of pages or a single page from a host device, wherein step (1) includes the step of dividing, when the print data are to exceed the memory capacity of the memory means, a storage area of the memory means into two storage areas based on the memory capacity, in which the print data stored in one of the storage areas from a leading side are maintained, and the print data stored in the other storage area are overwritten so as to store the print data from a trailing side; and

(2) printing the print data, when the print data exceed a memory capacity of the memory means, that comprise first print data, which correspond to print data within the a memory capacity of the memory means, and second print data, which are transmitted from the host device and which correspond to print data exceeding the memory capacity of the memory means, wherein said step (2) further includes the sub-steps of:

2(a) requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies;

2(b) printing the print data of second and subsequent copies, which data comprise the first print data and the second print data which are re-transmitted from the host device;

2(c) extracting the print data in order of ascending page number from the one of the storage areas and extracting the print data in order of descending page number from the other storage area; and

2(d) printing out the extracted print data from the two storage areas on a single recording medium.

Claim 44 (new). A printing method in a printing system, comprising the steps of:

(1) storing pages of print data at least partially on memory means, which print data having been transmitted in a page unit that comprises a plurality of pages or a single page from a host device, wherein step (1) includes the step of dividing, when the print data are to exceed the memory capacity of the memory means, a storage area of the memory means into two storage areas, in which the print data stored in one of the storage areas from a leading page are maintained, and the print data stored

in the other storage area are overwritten by the print data from a tailing page;
and

(2) printing the print data, when the print data exceed a memory capacity of the memory means, that comprise first print data, which correspond to print data within the a memory capacity of the memory means, and second print data, which are transmitted from the host device and which correspond to print data exceeding the memory capacity of the memory means, wherein said step (2) further includes the sub-steps of:

2(a) requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies;

2(b) printing the print data of second and subsequent copies, which data comprise the first print data and the second print data which are re-transmitted from the host device

2(c) extracting the print data in order of ascending page number from the one of the storage areas and for extracting the print data in order of descending page number from the other storage area, and

2(d) printing out the extracted print data from the two storage areas on a single recording medium.

Claim 45 (new). A printing method in a printing system, comprising the steps of:

(1) storing pages of print data at least partially on memory means, which print data having been transmitted in a page unit that comprises a plurality of pages or a single page from a host device; and

(2) printing the print data, when the print data exceed a memory capacity of the memory means, that comprise first print data, which correspond to print data within the a memory capacity of the memory means, and second print data, which are transmitted from the host device and which correspond to print data exceeding the memory capacity of the memory means, wherein said step (2) further includes the sub-steps of:

2(a) requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies;

2(b) printing the print data of second and subsequent copies, which data comprise the first print data and the second print data which are re-transmitted from the host device,

2(c) requesting the host device to transmit the second print data in order of descending page number from a tailing side;

2(d) extracting the first print data from the memory means in order of ascending page number, and

2(e) printing out the extracted first print data and the second print data that were transmitted from the host device in response to the request of the transmission requesting means on a single recording medium.

Claim 46 (new). A printing method in a printing system, comprising the steps of:

(1) storing pages of print data at least partially on memory means, which print data having been transmitted in a page unit that comprises a plurality of pages or a single page from a host device,

wherein step (1) includes the step of storing the first print data both in order of ascending page number from a leading side and in order of descending page number from a tailing side; and

(2) printing the print data, when the print data exceed a memory capacity of the memory means, that comprise first print data, which correspond to print data within the a memory capacity of the memory means, and second print data, which are transmitted from the host device and which correspond to print data exceeding the memory capacity of the memory means, wherein said step (2) further includes the sub-steps of:

2(a) requesting the host device to re-transmit the second print data when the print data are to be printed out in multiple copies; and

2(b) printing the print data of second and subsequent copies, which data comprise the first print data and the second print data which are re-transmitted from the host device,

2(c) extracting the first print data from the memory means in order of ascending page number and extracting the first print data in order of descending page number; and

2(d) printing out the extracted first print data on a single recording medium.